

SECTION II—CLAIMS

1.-23. (Canceled)

24. (Previously Presented) A method of forming sidewall spacers adjacent opposing vertical sides of a gate electrode, comprising:

forming at least one gate electrode over a substrate;

forming a first silicon oxide film conformally over the substrate and gate electrode from a combination of gases including bis-(tertiarybutylamino)silane and oxygen;

forming a silicon nitride film conformally over the first silicon oxide film from a combination of gases including bis-(tertiarybutylamino)silane;

forming a second silicon oxide film conformally over the silicon nitride film from a combination of gases including bis-(tertiarybutylamino)silane and oxygen; and

etching the first and second silicon oxide films and the silicon nitride film to form a two-part spacer, wherein the spacer includes

a first L-shaped part abutting the substrate and a sidewall of the gate electrode, and

a second L-shaped part nested in the first L-shaped part.

25. (Previously Presented) The method of claim 24 wherein forming the first silicon oxide film comprises providing one or more wafers in a furnace at a first temperature, and flowing BTBAS and oxygen into the furnace.

26. (Previously Presented) The method of claim 25 wherein forming the silicon nitride film, and the second silicon oxide film comprises keeping the one or more wafers in the furnace.
27. (Previously Presented) The method of claim 25 wherein forming the silicon nitride film comprises maintaining the one or more wafers in the furnace at a second temperature, and flowing BTBAS and NH₃ into the furnace.
28. (Previously Presented) The method of claim 27 wherein forming the second oxide film comprises maintaining the one or more wafers in the furnace at the first temperature and flowing BTBAS and oxygen into the furnace.
29. (Currently Amended) The method of claim 27 wherein the first temperature is in the range of 550[] °C to 580[] °C, and the second temperature is in the range of 580[] °C to 600°C.
30. (Previously Presented) The method of claim 24, further comprising, prior to forming the film silicon nitride film and subsequent to forming the first oxide film, purging the furnace.
31. (Previously Presented) The method of claim 30 wherein purging the furnace comprises ceasing the flow of BTBAS and oxygen, and flowing N₂ into the furnace.
32. (Previously Presented) The method of claim 24, further comprising, prior to forming the second oxide film and subsequent to forming the silicon nitride film, purging the furnace.

33. (Previously Presented) The method of claim 32 wherein purging the furnace comprises ceasing the flow of BTBAS and NH_3 , and flowing N_2 into the furnace.
34. (Previously Presented) A method of forming a transistor, comprising:
- forming at least one gate electrode over a gate dielectric layer, the gate dielectric layer disposed on a substrate;
 - depositing a first silicon oxide film conformally over the substrate and gate electrode from a combination of gases comprising bis-(tertiarybutylamino)silane and oxygen;
 - depositing a silicon nitride film conformally over the first silicon oxide film from a combination of gases comprising bis-(tertiarybutylamino)silane and ammonia;
 - depositing a second silicon oxide film over the silicon nitride film from a combination of gases comprising bis-(tertiarybutylamino)silane and oxygen; and
 - etching the first and second silicon oxide films and the silicon nitride film to form a two-part sidewall spacer, wherein the sidewall spacer includes
 - a first L-shaped part abutting the substrate and a sidewall of the gate electrode, and
 - a second L-shaped part nested in the first L-shaped part.
35. (Previously Presented) The method of claim 34 wherein the first silicon oxide, the silicon nitride, and the second silicon oxide are deposited in-situ.

36. (Previously Presented) The method of claim 34 wherein depositing the first silicon oxide, the silicon nitride, and the second silicon oxide are all done in the same furnace.
37. (Previously Presented) The method of claim 36 wherein the furnace is vertically oriented and the BTBAS, oxygen, nitrogen, and ammonia, each flow into the furnace from a bottom of the vertically oriented furnace.
38. (Previously Presented) The method of claim 34, further comprising implanting dopants to form a deep source/drain region in the substrate on at least two opposing sides of the gate electrode.
39. (Previously Presented) The method of claim 34 wherein etching the first and second silicon oxide films and the silicon nitride film comprises anisotropically etching the second silicon oxide layer, the silicon nitride layer, and the first silicon oxide layer.
40. (Previously Presented) The method of claim 34, further comprising implanting dopants to form a deep source/drain region in the substrate, adjacent to each opposing side of the L-shaped spacers.
41. (Previously Presented) The method of claim 40 wherein implanting dopants includes a partial passage of ions from an ion beam through the first and second L-shaped portions of the sidewall spacer.